

What is claimed is:

1. A method of selecting which of a plurality of wireless communication options will be used by a mobile communication device, comprising the step of selecting which wireless communication option to use based on a location of the mobile communication device on a route, the route, and the availability for use of each of the plurality of wireless communication options along the route.

2. The method of Claim 1, wherein one of the plurality of wireless communication options is not using any wireless communication.

3. In a mobile communication device, a method of selecting which of a plurality of wireless communication options will be used by the mobile communication device, comprising the steps of:

- (a) storing in the mobile communication device route information that is indicative of the route that the mobile communication device will be traversing;
- (b) storing in the mobile communication device information indicative of coverage areas for each of the plurality of wireless communication options along the route that the mobile communication device will be traversing;
- (c) determining where on the route that the mobile communication device is at as it traverses the route;
- (d) determining whether to switch from a first one of the wireless communication options presently being used to a second one of the wireless

communication options when the mobile communication device approaches a boundary of a coverage area of one of the wireless communication options; and
(e) switching from the first one of the wireless communication options to the second one of the wireless communication options when the mobile communication device crosses the boundary if the determination was made to switch to that second one of the wireless communication options.

4. The method of Claim 3, wherein the wireless communication options include a plurality of wireless networks.

5. The method of Claim 4, wherein the wireless communication options include at least one of the wireless networks having a plurality of service levels.

6. The method of Claim 4, wherein the wireless communication options include the option of ~~not~~ using wireless communication.

7. A method of selecting which of a plurality of wireless communication options will be used by a, comprising the steps of:

- (a) storing in a database information indicative of coverage areas for the wireless communication options along a route that the mobile communication device will be traversing;
- (b) determining where on the route that the mobile communication device is at as it traverses the route;

(d) accessing the database to obtain information regarding the communication options available along the route and determining whether to switch from a first one of the wireless communication options presently being used to a second one of the wireless communication options when the mobile communication device approaches a boundary of a coverage area of one of the wireless networks based on the wireless communication options available once the boundary is crossed and those that will be available further along the route; and

(f) switching from the first one of the wireless communication options to the second one of the wireless communication options if the determination was made to switch to that second one of the wireless communication options.

8. The method of Claim 7 wherein the step of switching from the first one of the wireless communication options to the second one of the wireless communication options comprises establishing a connection with the second one of the wireless communication options and dropping a connection to the first one of the wireless communication options only after the connection with the second one of the wireless communication options has been established.

9. The method of Claim 7, wherein the step of storing in a database information indicative of coverage areas for the wireless communication options along a route that the mobile communication device will be traversing includes storing boundary locations of the coverage areas for the wireless communication options along the route

where the boundary locations stored are limited to boundary locations that are on streets of the route.

10. The method of Claim 9 and further including the step of obtaining updated
5 information concerning the coverage areas of the wireless communication options and updating the database with the updated information.

11. The method of Claim 10 wherein the step of obtaining updated
information concerning the coverage areas of the wireless communication options
10 includes obtaining this information from providers of the wireless communication options.

12. The method of Claim 10, wherein the step of obtaining updated
information concerning the coverage areas of the wireless communication options
15 includes the mobile communication device monitoring signal strengths of the wireless communication options as it passes through the coverage areas for the wireless communication options and developing updated information concerning coverage areas for the wireless communication options based on the monitored signal strengths of the wireless communication options.

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13. The method of Claim 12 wherein the step of updating the database with the updated information includes determining whether the updated information is for a location presently in the database,

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- (a) if the updated information is for a location not presently in the database, then storing the updated information in the database for the location;
 - (b) if the updated information is for a location presently in the database, comparing the updated information with the information stored in the database for the location and updating the stored information if updated information is different from the stored information.

10 14. The method of Claim 10 wherein the step of updating the database with the updated information includes determining whether the updated information is for a location for which information is presently stored in the database,

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- (a) if the updated information is for a location not presently in the database, then storing the updated information in the database for the location;
 - (b) if the updated information is for a location presently in the database, comparing the updated information with the information stored in the database for the location and updating the stored information if updated information is different from the stored information.

20 15. The method of claim 14, wherein the step of updating stored information comprises shifting the stored information toward the updated information by a parameter and replacing the stored information with the shifted stored information.

16. The method of claim 15 wherein the step of updating the stored information comprises doing so with a running average method wherein the stored

information is the running average of initial information and subsequent update information.

17. A method of storing data in a database that is indicative of coverage areas
5 for wireless communication options along a route that a mobile communication device is traversing, comprising the steps of:

(a) storing boundary locations of the coverage areas for the wireless
communication options along the route in the database where the boundary locations are
boundary locations on streets of the route;

10 (b) periodically obtaining updated information concerning the coverage areas
of the wireless communication options as the mobile communication device traverses the
route; and

(c) updating the database with the updated information.

15 18. The method of Claim 17 wherein the step of updating the database with
the updated information includes determining whether the updated information is for a
location for which information is presently stored in the database,

(a) if the updated information is for a location not presently in the database,
then storing the updated information in the database for the location;

20 (b) if the updated information is for a location presently in the database,
comparing the updated information with the information stored in the database for
the location and updating the stored information if updated information is
different from the stored information.

19. The method of claim 18, wherein the step of updating stored information comprises shifting the stored information toward the updated information by a parameter and replacing the stored information with the shifted stored information.

5 20. The method of claim 18 wherein the step of updating the stored information comprises doing so with a running average method wherein the stored information is the running average of initial information and subsequent update information.

10 21. A method of determining which of a plurality of wireless communication options to use for data transmission with a mobile wireless communication device that is traversing a route, comprising the steps of determining where the mobile wireless communication device is on the route, determining which wireless communication option to use for the data communications and when to use it based upon the location of the
15 mobile wireless communication device on the route and the availability of the wireless communication options at the location where the mobile wireless communication device is at on the route and locations on the route where the mobile wireless communication device will subsequently be at as it travels the route.

20 22. The method of claim 21, wherein the step of determining which wireless communication to use and when to use it includes making the determination based upon the cost to use each wireless communication option.

23. The method of claim 21, wherein the step of determining which wireless communication option to use and when to use it includes making the determination based upon the cost to and performance level of each wireless communication option.

5 24. A method of providing a uniform content access layer application program interface for application programs that use mobile communication provided by a mobile communication device, comprising the steps of:

(a) providing a database accessible by the application program;

(b) storing in the database information concerning any wireless
10 communication options that are available for use by the mobile communication device as it traverses a route;

(c) the application program deciding its requirements for data transfer via wireless communication based on the information about the wireless communication options stored in the database.

15 25. The method of claim 24 wherein the information about the wireless communication options stored in the database includes information concerning cost and performance of the wireless communication options.

20 26. A method of providing a uniform content layer application program interface for application programs that use mobile communication provided by a mobile communication device, comprising the steps of:

(a) providing a database accessible by the application program; and

(b) storing in the database information concerning any wireless communication options that are available for use by the mobile communication device as it traverses a route.

5 27. The method of claim 26 wherein the information about the wireless communication options stored in the database includes information concerning cost and performance of the wireless communication options.

10 28. A method of wireless transmission of data to mobile data communication devices using wireless communication technology that has high bandwidth but low geographic coverage, comprising the steps of:

- 15 (a) providing multiple wireless communication base stations along roads, each base station having a high bandwidth and low geographic coverage;
- (a) storing in the mobile data communication device route information that is indicative of the route that the mobile communication device will be traversing;
- (b) storing in the mobile communication device information indicative of coverage areas for each base station located along the route that the mobile communication device will be traversing;
- 20 (c) determining which base station to use to send data to the mobile data communication device based on the location of the mobile data communication device on the route that it is travelling;

(d) transferring data to be sent to the mobile data communication device from a content provider to the base station that it was determined to use to send the data to the mobile data communication device; and

(e) the base station to which the data was transferred transmitting the data to the mobile data communication device when the mobile data communication device enters that base station's coverage area.

29. A method of fueling a vehicle with information through a wireless communication device in said vehicle, comprising the steps of:

(a) determining a predicted time when said vehicle will be able to communicate with an info-fueling station having a predictable geographic position;

(b) sending a request for information from said vehicle through said wireless communication device to at least one wireless communication network;

(c) routing said information from an information source in communication with said wireless communication network to said info-fueling station; and

(d) downloading said requested information to said vehicle through said info-fueling station during the time that said wireless communication device in said vehicle is in communication range of said info-fueling station.

30. The method according to Claim 29, wherein said info-fueling station has a fixed position relative to vehicles.

31. The method according to Claim 29, wherein said information request identifies said info-fueling station.

32. The method according to Claim 29, wherein said wireless communication
5 network identifies said info-fueling station.

33. The method according to Claim 29, wherein said wireless communication device is coupled to an on-board communication network in said vehicle.

10 34. The method according to Claim 29, wherein said downloading of information commences once the detected signal strength of communication between said wireless communication device in said vehicle with said info-fueling station reaches a predetermined level.

15 35. The method according to Claim 29, wherein said wireless communication network also routes previously stored requests for information to said vehicle through said info-fueling station.

20 36. The method according to Claim 29, wherein said info-fueling station is mobile.

37. The method according to Claim 36, and further including the steps of moving each mobile info-fueling station to a location to optimize performance of info-fueling communication.

5 38. A method of wireless transmission of data to mobile data communication devices using wireless communication technology that has high bandwidth but low geographic coverage, comprising the steps of:

(b) providing multiple mobile wireless communication base stations on roads, each base station having a high bandwidth and low geographic coverage;

10 (a) storing in the mobile data communication device route information that is indicative of the route that the mobile communication device will be traversing;

(b) storing in the mobile communication device information indicative of coverage areas for each base station located along the route that the mobile communication device will be traversing;

15 (c) determining which base station to use to send data to the mobile data communication device based on the location of the mobile data communication device on the route that it is travelling;

(d) transferring data to be sent to the mobile data communication device from a content provider to the base station that it was determined to use to send the data to the mobile data communication device;

20 (e) the base station to which the data was transferred transmitting the data to the mobile data communication device when the mobile data communication device enter that base stations coverage area; and

